figures differ from those given by the Guide; but neither of these appear derived from the works of the sages and philosophers, but are rather drawn from the *tendency* of their conduct or their writings.

The artist, George Syrlin, has perpetuated this custom, and sculptured upon the stalls in the Cathedral of Ulm (A.D. 1469 to 1474), Socrates, Plato, Aristotle, and Pythagoras. Germany was early impressed with these Byzantine tastes and customs, which she had thus preserved.*

If the Latin church neglected this branch of iconography, borrowed from the profane history, the Sibyls, those pagan prophetesses who predict the birth, the life, death, and resurrection of Christ, are there found, side by side, with the Jewish prophets, as were the philosophers of the Greeks. The Sibyl of Persia, of Libya, of the Red Sea, of Cumes, of Samos, of the Euxine, of Europe, of the Tibur, the Sibyl Agrippa, of Delphos, of the Hellespont, and of Phrygia, figure not only in representation, but in the processions of the Roman church. At Seville, the twelve Sibyls form part of the pageant upon Good Friday; each carries the emblem characteristic of her prediction.

The Greek church gave likewise an equal place of importance to the characters, as well as the events, of the Old Testament, as to those of the gospel, which the Latins yielded in favour of Christianity and the saints.

The marvels of the ancient law, in which were represented the orders of the heavenly powers, as classed by Denys, the Areopagite, and the fall of Lucifer, comprised the history of the personages of the Old Testament, from the creation of Adam to the death of Holofernes. The Greeks also gave a place to the figures of the holy patriarchs from Adam to Jacob; to the twelve sons of Jacob; to the prophets and the judges: to the holy women, from Eve, through Sarah and Rebecca, to the righteous Anna, the mother of the Virgin: they represent particular prophecies, and conclude with the delineation of the "Tree of Jesse."

The Alexandrian school of Alchemists, the Neo-Platonician philosophers, principally sought three things—the philosopher's stone, or material riches; the universal panacea, which would afford long life; and the soul of the universe, or happiness from the commerce with good, or subjection of bad, spirits; but their theories are clothed in such mystic language, that it is always difficult, generally impossible, to unravel them. Ammonius, Plotinus, Porphyrus, Iamblichus, — Egyptian philosophers, — Proclus of Constantinople, studied the Alexandrian philosophy, and carried their theurgic systems to Athens. Athens and Alexandria became the great arena of the last efforts of paganism against the establishment of Christianity. Zozimus the Panopolitan, of the fourth century, the describer of the distilling apparatus, Marie, the Jewess, Synesius, Olympiodorus of Alexandria, Marcus Græcus, the inventor of gunpowder and other combustible and explosive compounds, Cleopatra, Stephanus, and a crowd of alchemists of this period, have passed hitherto scarcely noticed by the historians of science. From the fifth to the eighth centuries the priesthood appear to have collected the wisdom of the past, and to have contributed to the progress of the sciences and of letters; and from the time when St. Isidore, bishop of Seville, at the commencement of the seventh century, condensed the knowledge of his predecessors in his "*Origines*," an encyclopedia of science, in twenty books, ecclesiastics have, from time to time, embodied the results of their studies or other labours, occupied as they still were in propagating the faith, and converting the infidels by exhortation or example.

Schools were established by Charlemagne on the Continent, in forming which, he sought the aid of Alcuin, the celebrated English monk, who, we are told, instructed him not only in history, but in rhetoric, dialectics, arithmetic, and in "astronomy," to the study of which he particularly directed himself. This learned Englishman had been sent to Italy by the Archbishop of York; and there met Charles, who, having by his beneficence drawn him to France, there placed him with Peter of Pisa, at the head of the schools in France, of which the first was established in the palace of the emperor.

The arts, which had been brought by the Romans into Britain, appear to have been sustained through the vicissitudes which followed the withdrawal of Maximus from our shores. "The most destructive of the northern conquerors, the Anglo-Saxons, did not long continue to despise the pleasing arts, particularly that of painting, which was practised by them with considerable success." (*Henry's History of England.*) If Charlemagne possessed the ruder and sterling qualities of his age to a remarkable extent, he yet was unquestionably indebted to the Anglo-Saxons for the enlightened views which led him to instruct the barbarous nations of his extended empire. The arts had been encouraged at York; the renown of the painted chamber in which Edward the Confessor afterwards died; the remains of the Saxon chased and enameled work, which was esteemed upon the Continent as early as the seventh century: the illuminated manuscripts of the seventh to the ninth centuries, which still exist, prove that the arts, as introduced by the Romans, were never wholly lost amongst us.

Another cause was in action at the close of the eighth, and during the two following centuries, which, although perhaps of secondary importance, as contributing to the progress of science by means of discovery, yet was operating to spread the atmosphere of letters and the arts, by means of laborious compilation and commentation.

The plain, intelligible language in which Geber and many of the Arab chemists began to clothe their thoughts, indisputably advanced the cause of the arts and sciences; we cannot withhold from these the praise of having gathered the seed which had remained upon the withering tree of ancient knowledge, and of winnowing from it the husk of that mystic symbolism designed by Egypt for the purpose of monopolising the sciences. They did even more,—they planted the seed; the young plant was nurtured by them, which, under the hands of the fostering monks of a few succeeding centuries, grew into a sturdy tree, the boughs of which sheltered the tradition and experience of the past.

From the tenth to the fourteenth century little progress was made; the arts were busily pursued, for religion was not solely occupied in preparing men for the future, but was introducing experience into the sanctuaries, and predisposing men for the general scientific movement of a later period, destined to present, under a new aspect of society, one of the phases through which human intelligence proceeds, in its development under eternal laws.

From the eighth and ninth centuries we are fortunate in possessing several manuscripts which have long lain dormant, treating upon the arts, and which form valuable evidence of the condition of the arts during the period to which they belong.

The earliest of these appears to be that existing at Lucca; it is of the eighth century, and of Byzantine origin, probably of the period of the persecution of the Greek artists under Leo the Isaurian, A.D. 726; it contains the necessary directions for dyeing skins, making coloured glass, the preparation of oil colours, and varnishes for painting, and a description of various substances used in the arts.—(*Muratori Antiq. Ital. Medii Ævi.*, v. 2, p. 269.)

The next author who has written upon the processes of art is the artist-monk Eraclius, who probably wrote about the middle of the ninth century. That Eraclius wrote later than the seventh century, his quotation from St. Isidore, who died A.D. 636, proves.

After a long period of depression, a new impulse had been given to the arts and sciences at an early period of the eleventh century.

"Emulation was first directed to the sciences and literature, which, at that period, the services of the church and political quarrels rendered the most necessary, towards theology, jurisprudence, geometry, logic, rhetoric, music or psalmody, architecture, and painting. Dunstan, Aldred, and Lanfranc in England, Robert in France, Hildebrand at Rome, had been encouraging the arts, raising and decorating churches which the reverence for relics caused to be ornamented by sumptuous shrines and costly gates of bronze or silver. In England, France, and Italy, a great number of manuscripts, ornamented with miniatures and otherwise illuminated, were executed. The ornaments for the altars, desks of gilt bronze, and objects which ornamented the choirs, much favoured the arts of casting metals, modelling, enameling, niello, damascene work, and often produced works of surpassing execution.

It is to this period, the early half of the eleventh century, that the treatise of Theophilus upon the 'Divers Arts' is to be ascribed.

While Greece was the painter of the continent, Tuscany the enameller, Arabia the worker in metals, Italy the jeweller, France the worker in glass, Spain the chemist, Germany anxious in acquiring knowledge and dexterity in all; when all these artists were adorning the church of St. Mark at Venice, and were elsewhere occupied in writing or painting,—the terms were synonymous,—the sacred histories in the churches, so that the illiterate might read the examples set before them, the 'Treatise upon Divers Arts' came forth."*

The treatise of Theophilus is divided into three books. The first is devoted to painting as practised by the Greeks, upon walls, panels, skins, canvasses, and books, with either a tempera or oil medium; of the composition of a varnish of sandarach and linseed oil: the colours used by Theophilus are,—orpiment, cerusse, massicot, cinnabar or vermilion, vegetable reds and blues, mineral blue (the lazurstein of the Germans), minium or red lead, carbonaceous blacks, greens from acetates of copper, terra-verde, and vegetable greens, and sinoper or red earths; of the preparation and laying on of gold, of transparent oil painting, called "Aureola" by the Greeks, of the preparation of colours and of ink.

The second book of Theophilus comprises the nature of "working in glass," and the "costly variety of window work" for which France was renowned. Of sapphire-glass, which was probably coloured with the "sapphire" of the Greeks,—our "lapis lazuli,"—as well as by cobalt; of red glass coloured with iron or copper; of green glass; of the formation and decoration of vases of glass or earthenware with colours or with gold; of Greek glass with a golden ground which ornaments mosaic work, and of a flux for glass.

The third book has evidently been treated by Theophilus with more care and attachment than the others; the eloquent preface, the labour expended in description, and the great volume of the work upon metals attest this. The chapters upon the production of electra or enamels, which art has been supposed of later invention, will be read with interest. Theophilus tells us in his introductory preface that he shall proceed to describe, amongst other things, whatever Tuscany knows of in enamels, or in variety of mosaic or niello. The Tuscans borrowed this art from the Egyptians, the fragment of the case of a mummy, in the Egyptian collection at Turin, of which the ornaments are in a beautiful glass-mosaic, warrant this conclusion.

The Harleian MS. contains much that the other known MSS. of Theophilus want, the description of the organ is rendered complete, the manufacture of bells and cymbals described, of variety of ironwork, of *brasses*, "*interrasilis opus*,"—which is of the nature of our English monumental brasses: of Damascus work in steel. A description of the Italian work promised in the introductory chapter, and never yet fulfilled, follows in this work; the arts of sculpturing, gilding and staining ivory, of gems, pearls, and electra or enamels.

Railway Rating.—An award has just been made by Mr. Frederick Pollock in an appeal by the Great Western Railway Company against the assessment of their terminus and railway in the parish of Paddington; the line of railway in the parish is rather more than a mile in length. The witnesses examined on the part of the parish were Mr. A. Giles and Mr. W. Tress, who claimed, as the rateable value, 11,361*l.*; for the Great Western Railway Company the sums given by Mr. G. Driver and another surveyor amounted only to 4,615*l.* The award, for the terminus and the railway, was 7,378*l.*

* An interesting search might be made for proofs of a similar practice in England, which was, at an early period, influenced by Byzantine art.

* Treatise of Theophilus, translated by R. Hendrie, For. London, 1847. John Murray.—P. xv.

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